

The Overview of the Evaluation Methods of the Company's Creditworthiness

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Abstract

The activity of any commercial organisation is of high risk. It is often connected with the fact that companies tend to take various risks to achieve their own goals for the sake of which they operate and perform their activities. Understanding and determination of whether a company is financially stable require us to conduct the so-called creditworthiness analysis of an entity. Moreover, it is expedient for any profit-making company to analyse and perform monitoring its creditworthiness. All of this makes such a kind of an analysis pretty relevant and useful. This research may be regarded as an attempt to examine theoretical fundamentals and some existing methodologies of creditworthiness analysis.

Keywords: creditworthiness; financial analysis; commercial organisation; credit risk; financial coefficients; bankruptcy

JEL Classification: G32

Today's economy of any country is full of risks. All economic agents often have to operate in uncertainties. Profit-making companies are especially exposed to risks since they are supposed to function for the sake of generating profit. As we know, such activities are crucially risky. Taking into consideration the fact that entities interact not only with their customers and business partners but also with other economic agents including investors, shareholders and other stakeholders, the activity of these companies may have a vast, or at least some, influence on economic subjects with which a particular company collaborates. In addition to it, the success of any commercial company largely depends on its financial stability, profitability and other factors of a finance area. As a result, it is imperative to use a creditworthiness analysis for the reasons mentioned above as this enables a company to manage its business in the most proper and financially safest way. As for all economic agents interacting with a company, this analysis gives an excellent opportunity to make right decisions. That is why it shows that such a kind of

investigation may be considered to be a very effective tool in the field of finance.

The creditworthiness analysis is quite complex and multi-faceted since it has a lot of aspects to be analysed. In other words, people who conduct this analysis need to examine business in question from a lot of perspectives. It should be noted that the main elements of a study are connected with liquidity ratios, debt indicators, activity coefficients, profitability indicators and indicators of cost-effectiveness. These aspects are very informative and crucially important.

It is essential to learn and analyse the main techniques used for the creditworthiness analysis. There are a lot of methods to evaluate the creditworthiness of a company, but we will examine those that are the most widely used and deserve due regard.

The most known analytical techniques of creditworthiness and the risk of bankruptcy were elaborated by economists Duran, Altman, Dupon, Lis, Taffler, Springate, and others [Corazza, 2016, p. 20]. All of these methods are based on different approaches and use various coefficients, but all of them are aimed at the

Table 1

Comparative analysis of the methods used to assess companies' creditworthiness [Aralica, 2013, p. 141]

Name of a method	CAMPARI	"C-1-6" rules	PARSER
Countries of application	In banks of Europe and the USA	In Western countries	In the USA
Indicators studied	Character – customer's reputation; Ability – ability to repay a loan; Means – something that guarantees your solvency; Purpose – for what a loan is taken out; Amount – a loan amount; Repayment – conditions of loan repayment; Insurance – protection against risks of failing to repay a loan	C 1 – character – lender's reputation; C 2 – capacity – solvency; C 3 – capital – capital adequacy of a borrower; C 4 – conditions – terms of loan repayment; C 5 – collateral – some ownership needed in case of failure to give a loan back; C 6 – control – supervision	P – person – a borrower's reputation; A – amount – a loan amount; R – repayment – conditions of repayment; S – security – an estimate of loan collateral; E – expediency – the aim of taking out a loan; R – remuneration – interest rate
Main weaknesses	Appropriate coefficients are not sufficient to assess the company's creditworthiness.		
Result	It is impossible to assess the creditworthiness of a company thoroughly.		

same aim, namely, the analysis of creditworthiness or the risk of bankruptcy. As for the method applied in the Russian practice, PJSC "Sberbank" elaborated the technique for evaluating companies' creditworthiness as well.

We need to emphasise the fact that whichever technique we use for the analysis, the indispensable part of creditworthiness evaluation is vertical and horizontal analyses of financial reports. The first analysis represents stakes that each financial position has in total assets or liabilities. The second one shows deviation, specifically, reduction or increase in values of position in financial reports. These aspects are informative since they give some understanding about changes and fluctuations in the financial position of a company under consideration.

Before we move on to the analysis of the existing methods of the creditworthiness analysis, it is expedient to pay attention to the general procedure for conducting such an investigation. It is needed to stick to this way as following this may enable us to obtain the more objective and accurate results in terms of the creditworthiness of a company under investigation. It is so because of the lack of technique that could perfectly examine the creditworthiness of an

enterprise. In other words, we cannot rely on only one particular method. We have to resort to using some different techniques.

The general procedure for the creditworthiness analysis is quite simple but complex as it consists of some parts. There are four parts, each of which includes a set of indicators characterising one aspect of the business. The first part is related to the general analysis of the balance sheet liquidity and liquidity ratios of a company [Eskindarov, 2018, p. 251]. This step is one of the key stages of the evaluation of entity's creditworthiness. It shows if a company can pay off its liabilities by respective assets. The second stage pertains to turnover ratios that reflect how effectively a company uses its resources – the higher asset turnover, the higher the usage effectiveness of them, consequently, the higher creditworthiness. The next step is supposed to include profitability indicators which demonstrate how much money different kinds of assets generate. One of the final stages is the analysis of financial stability. It displays to what extent a company in question is dependent on trade credits, loans and raised capital. Besides, it is expedient to evaluate an enterprise with the help of some scoring models,

Table 2

Classification of enterprises by solvency level following Duran's methodology [Dmytryshyn, 2014, p. 53]

Indicator	Limits for classes according to criteria				
	1st class	2nd class	3rd class	4th class	5th class
The profitability of assets, %	30 and higher – 50 scores	From 29.9 to 20 – from 49.9 to 35 scores	From 19.9 to 10 – from 34.9 to 20 scores	From 9.9 to 1 – from 19.9 to 5 scores	Less than 1 – 0 score
Current liquidity ratio	2.0 and higher – 30 scores	From 1.99 to 1.77 – from 29.9 to 20 scores	From 1.69 to 1.4 – from 19.9 to 10 scores	From 1.39 to 1.1 – from 9.9 to 1 score	1 and lower – 0 score
Autonomy coefficient	0.7 and higher – 20 scores	From 0.69 to 0.45 – from 19.9 to 10 scores	From 0.44 to 0.3 – from 9.9 to 5 scores	From 0.29 to 0.2 – from 5 to 1 score	Less than 0.2 – 0 score
Limits for classes	100 scores	From 99 to 65 scores	From 64 to 35 scores	From 34 to 6 scores	Zero score

authors of which I mentioned at the beginning of this paper. Such models give a possibility to classify companies by bankruptcy risk.

Also, it is quite reasonable and informative to provide a table with a comparison of existing methods for companies' creditworthiness evaluation. We will examine some well-spread techniques bringing together their main features in the table presented below.

As we can see, the techniques mentioned above are quite similar to each other because of the approaches used. All of them may be effective if properly using them. However, the main drawback is that the indicators applied are not adequate to evaluate entities' creditworthiness fully.

Another and one of the most popular methods of the analysis of companies' creditworthiness is the technique elaborated by Duran [Garcia, 2013, p. 2012]. This method is considered to be an integral estimate of financial stability based on a scoring analysis. In this case, the method might add up to summarising three leading indicators characterising creditworthiness of a company. Each of these indicators has weight coefficients. According to this model, each considered entity is supposed to be related to a particular class taking into account the results of an analysis. Table 2 presents this classification.

As can be seen, there are five classes of creditworthiness of companies. The first-class means that a company can give its loans back. The second one pertains to a company that has some negligible risks connected with its indebtedness [Ivanickova, 2016, p. 389]. The third class of companies implies that enterprises are quite risky in terms of their ability to pay off debts. The next class indicates that a company has high risks of bankruptcy, even in spite of having taken special measures concerning the so-called financial recovery. The last class shows that a company is too risky and almost not solvent [Patlasov, 2014, p. 499].

The calculation formula for the integral estimate of creditworthiness under Duran's method is the following:

$$D = b_1 * ROA + b_2 * CR + b_3 * EtTA, \quad (1)$$

where:

D – the estimate of creditworthiness;

b_1, b_2, b_3 – set coefficients;

ROA – return on assets;

CR – current ratio;

EtTA – equity to total assets.

As a result of summarising scores obtained and using the formula mentioned above, we need to conclude concerning what class of cred-

Table 3

Classes of entities by their creditworthiness following the model elaborated by Altman [Coser, 2019, p. 156]

Indicator of Altman (Z)	Entity's creditworthiness	Bankruptcy risk
less than 1.8	too low	too high
from 1.81 to 2.7	low	high
from 2.8 to 2.9	moderate	moderate
more than 2.99	high	low

itworthiness the company in question might be related to.

The next part of our research I connected with determining what the analysis of creditworthiness elaborated by Altman includes. It is another technique for assessing bankruptcy risk.

This model is the formula constructed by the American economist Edward Altman. This formula is supposed to forecast companies' bankruptcy probability [Lozinskaia, 2017, p. 845]. Altman's model indicating bankruptcy risk was built on the sample of 66 entities, 50% of which are successful companies, and another half is related to enterprises that went bankrupt. Altman elaborated several models. The main distinction is that they have a different number of indicators based on which we can calculate the final result in respect of bankruptcy risk. The first model encompasses two factors, namely, quick ratio and the coefficient of share weight of borrowed funds in a total amount of assets [Rowland, 2019, p. 328].

By the fact that a two-factor model does not ensure a complex estimate of financial position of a company, professional analysts are much more willing to use a five-factor model:

$$Z = 1,2 * x_1 + 1,4 * x_2 + 3,3 * x_3 + 0,6 * x_4 + x_5, \quad (2)$$

where:

x_1 — working capital to total assets ratio

x_2 — retained earnings to total assets ratio

x_3 — EBIT to total assets ratio

x_4 — the market value of equity to total liabilities ratio

x_5 — sales figures to total assets ratio.

As a result of computing the integrated indicator (Z), we estimate the company's bankruptcy risk [Zhdanov, 2019, p. 18] as shown in Table 3.

After an analysis of existing methods of assessing creditworthiness, I conclude that there are a lot of ways to evaluate companies' creditworthiness. In spite of the availability of various techniques, there are no methods that could enable us to obtain very objective results. It is so because each of them is based on different approaches that are not impeccable. As a result, these methods do not take into account all aspects connected with creditworthiness.

Moreover, even though we have lots of methods, it is a long way to go. Flaws of already applied methods might make us think of elaborating new techniques and designing models. It could enable us to estimate creditworthiness in a better way since there is no limit to perfection.

References

- Budimir, T., Aralica, Z. (2013). Assessments of creditworthiness of crafts in Croatia. *Economic Research — Ekonomska Istraživanja*, 26, 133–150.
- Corazza, M., Funari, S., Gusso, R. (2016). Creditworthiness evaluation of Italian SMEs at the beginning of the 2007–2008 crisis: An MCDA approach. *North American Journal of Economics and Finance*, 38, 1–26.
- Coser, A., Maer-Matei, M. M., Albu, C. (2019) Predictive models for loan default risk assessment. *Economic Computation and Economic Cybernetics Studies and Research*, 53(2), 149–165.
- Dmytryshyn, L. (2014). A methodological approach to development and optimization a set of parameters for a company's creditworthiness evaluating. *Economic Annals — XXI*, 7–8, 52–55.
- Eskindarov, M. A., Fedotova, M. A. (2018). *Corporate Finance*. Moscow: KnoRus.
- Financial analysis: financial and investment. Blog of Zhdanov Vasilii and Zhdanov Ivan. Available at: <http://finzz.ru/kreditosposobnost-predpriyatiya.html> (accessed 30.05.2019).
- Garcia, F., Gimenez, V., Guijarro, F. (2013). Credit risk management: A multicriteria approach to assess creditworthiness. *Mathematical and Computer Modelling*, 57(7–8), 2009–2015.
- Ivanickova, M., Michalcova, B., Gallo, P. (2016). Assessment of companies' financial health: Comparison of the selected prediction models. *Actual problems of Economics*, 180(6), 383–391.
- Lozinskaia, A., Merikas, A., Merika, A., Penikas, H. (2017). Determinants of the probability of default: the case of the internationally listed shipping corporations. *Maritime Policy and Management*, 44(7), 837–858.
- Patlasov, O. Y., Vasina, N. V. (2014). Borrower's creditworthiness analysis and scoring modelling. *Actual Problems of Economics*, 160(1), 490–503.
- Vrbka, J., Rowland, Z. (2019). Assessing the financial health of companies engaged in mining and extraction using methods of complex evaluation of enterprises. In Ashmarina, S., Vochozka, M. *Sustainable Growth and Development of Economic Systems: Contradictions in the Era of Digitalization and Globalization, In Contributions to Economics*. Cham, Switzerland: Springer. Pp. 321–333.

Обзор методик анализа кредитоспособности компании

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Аннотация. Деятельность той или иной коммерческой организации несет в себе многочисленные риски. Зачастую это связано с тем, что компании берут их на себя для достижения своих целей, ради которых они осуществляют свою деятельность. Для того чтобы установить, насколько компания является безопасной в финансовом плане, необходимо проводить не только внешнюю оценку ее кредитоспособности, но также целесообразно самостоятельно и систематически производить мониторинг и анализ своей кредитоспособности. Анализируя и оценивая теоретические основы и существующие методики анализа кредитоспособности компаний, автор пришел к выводу, что при наличии альтернативных методов оценки кредитоспособности предприятия ни один из них в полной мере не отвечает требованиям комплексности при учете фактора рисков.

Ключевые слова: кредитоспособность; финансовый анализ; коммерческая организация; кредитный риск; финансовые коэффициенты; банкротство